PDR RID Report

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Organization	Mission Operations Manager/505		**Review** FOS
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Document	PDR		**Priority** 2

Section NA	**Page** RT-173	**Figure Table** NA

Category Name Design   **Actionee**   HAIS

Sub Category

Subject TLM statistics

Description of Problem or Suggestion:

The current design includes archiving selected statistics (min, max, mean, standard deviation, and number of samples) for every TLM mnemonic for every orbit, every day, every month, and mission-to-date. These choices may be somewhat arbitrary, and may be neither necessary nor sufficient for typical needs. It is likely to be inefficient and unproductive to archive every TLM mnemonic identically.

It may be more beneficial and efficient for FOT and/or subsystem engineers to define needed statistical archiving on a subsystem-by- subsystem and mnemonic-by-mnemonic basis based upon empirical real-world on-orbit flight operations and flight systems engineering experience. Archiving as defined by them could then be implemented by the system based upon tables they create. At the least, the system could provide a few pre-defined options from which users choose for each mnemonic.

For example, it is unlikely that archived statistics of slowly varying temperatures, oscillator frequencies, or constant voltages of regulated power supplies should be identical to archived statistics of rapidly changing quantities such as gyro wheel speeds, transmitter temperatures, or attitude sensors.

Originator's Recommendation

Provide a capability for mnemonic- unique archiving, minimally including several options from which users can choose.

GSFC Response by: **GSFC Response Date**

HAIS Response by: D. Herring   **HAIS Schedule**   2/3/95

HAIS R. E.   J. Kuntz   **HAIS Response Date**   1/19/95

The FOS design provides for the generation of statistics in two ways (ref. FOS Requirments Specification for the ECS Project - Volume 1: General Requirments, Section 8.5). The first method is that the system will automatically generate a basic set of statistics for every telemetry parameter. The intent of the system generated statistics is to provide a set of basic information which could be used for trending, quick analysis (the data does not need to be processed prior to display and/or print), performance assessment, and as input for more complex statistical analysis without having to reprocess the data. The second method is to allow the user the flexibility to request statistical analysis based upon their individual needs. This would provide them with the capability to specify the parameters which would be included in the analysis, the type of statistical data to be generated, and the intervals over which the statistics would be calculated. Additionally, the user has the flexibility to submit their request either as a one time request, or via the standing orders manager which would then schedule the analysis to be computed at regular intervals as specified by the user. The user can also request that the results be stored for use when desired.

Past experience has shown that trying to establish a subset of telemetry parameters which are used for statistical analysis is not efficient. The needs of the FOT change during the mission and invariably additional data is required. This would require the system to reprocess data from launch to generate the new statistical data required. This is both time consuming and inefficient. The current FOS design provides the flexibility and scalability required by the FOT.

Status **Closed**	**Date Closed** **2/1/95**	**Sponsor** **Johns**

******   Attachment if any ******